

US IOOS®

# Coastal and Ocean Modeling Testbed: Roundup and Progress

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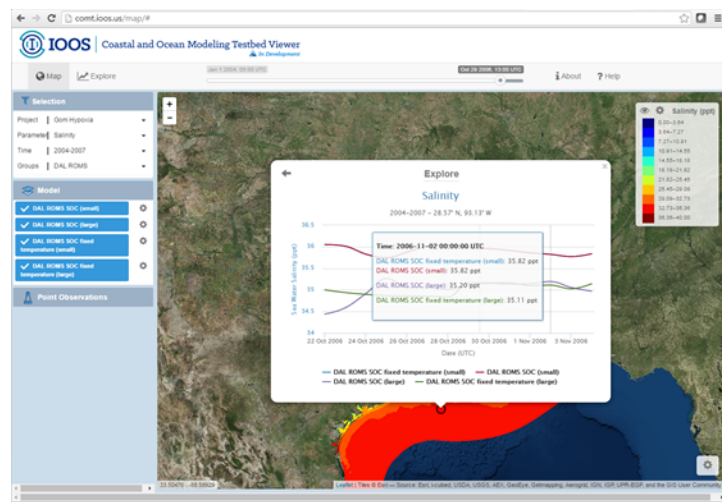


# Outline by project

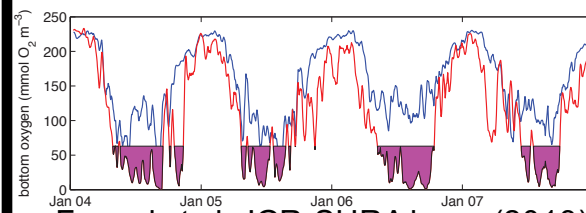
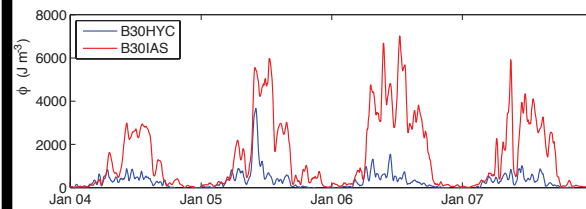
1. Significant Accomplishments for FY15
2. Plans for FY16
3. Transition Statistics and Performance Metrics Summary

# Projects

## Cyber Infrastructure



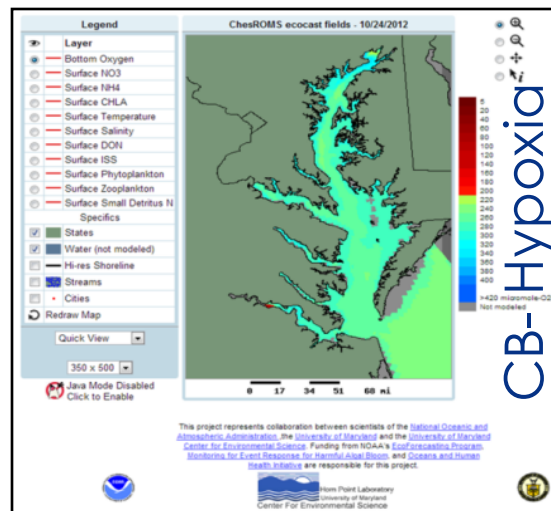
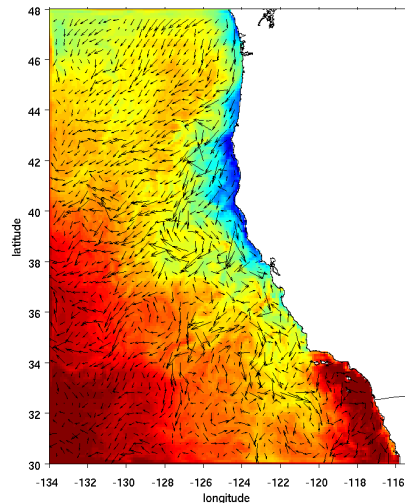
New Viewer displaying GoMx SOC Salinity



Fennel et al. JGR SURF issue (2013)

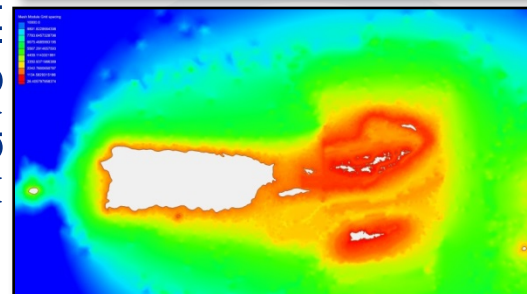
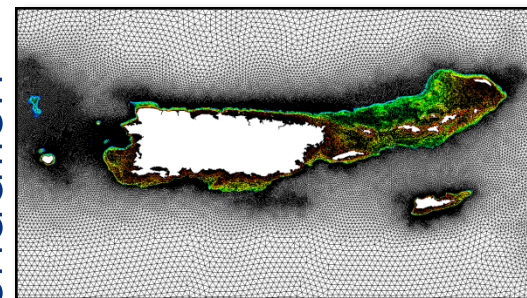
## GoMx-Hypoxia

## WCOFS



## CB-Hypoxia

## Wave Inundation



# Chesapeake Bay Hypoxia

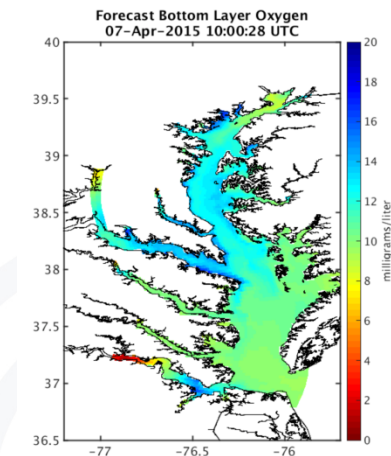
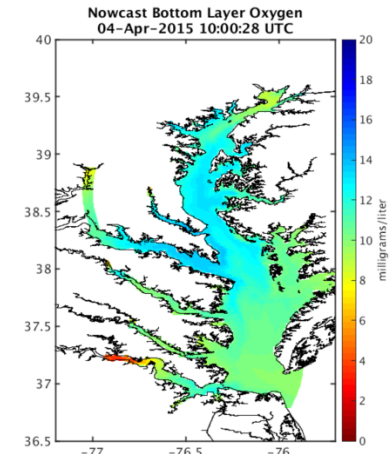
Objective: Assess suite of estuarine dissolved oxygen models to make recommendations for producing predictions of hypoxia within Chesapeake Bay

FY15:

- RTAP proposal accepted for Tier 1 Funding in FY17
- Transition Plan drafted and passed initial review

FY16:

- Stakeholder Mtg Scheduled
- Finalize Transition Plan
- Transition code into CBOFS (in review now)



# Hypoxia Prediction in the Northern Gulf of Mexico

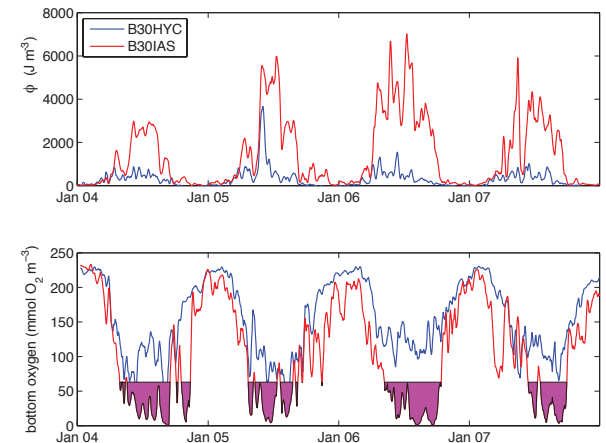
Objective: Implement and demonstrate a real-time hypoxia forecasting system applicable to the hypoxia-prone Northern Gulf of Mexico.

## FY15:

- Submitted a manuscript describing the results of first phase of model inter-comparison to JGR

## FY16:

- Working with CI team to visualize the bottom thickness layer in COMT viewer
- Recommendations for R2O



Fennel et al. JGR SURF issue (2013)



# Puerto Rico/U.S. Virgin Islands Surge and Wave Inundation

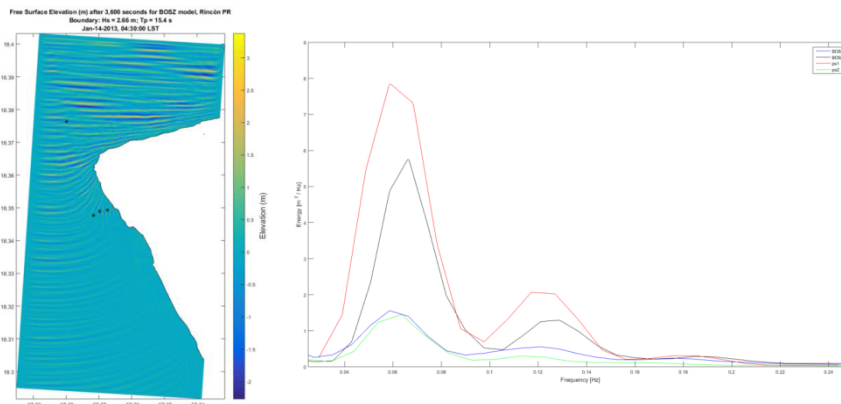
Objectives: Extend wave/surge operational forecasting capability from mild-sloped coastal areas to steep-sloped areas such as around Caribbean and Pacific islands

## FY 15:

- Developed MEOWs and MOMs for HI to complement Caribbean
- In process of transferring ADCIRC-SWAN model developed to CariCOOS, to run as a quasi-operational guidance system in Puerto Rico.

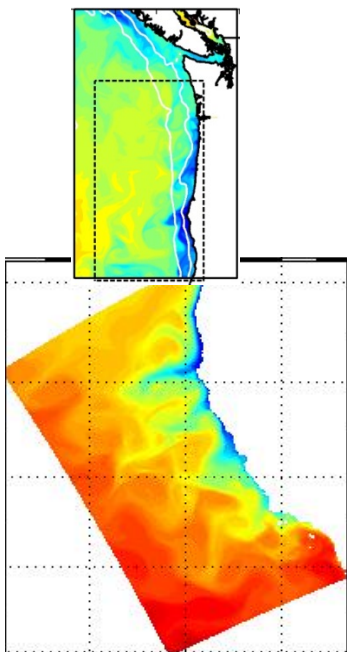
## FY16:

- Continue transition plans from FY15



Simulation results from the phase-resolving wave model BOSZ for the Jan 2013 Rincon PR field case, to study cross-reef wave transformation. Left: Instantaneous surface displacement. Right: Modeled and observed wave spectra offshore of the reef (ps1) and on top of the reef (ps2).

# The West Coast Project



## Objectives:

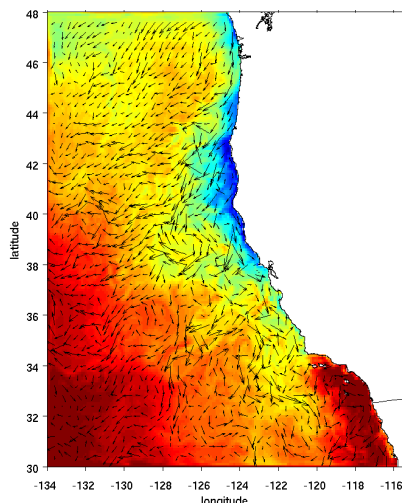
- Compare 3 ROMS based models as a step toward a coordinated super-regional modeling capability for the U.S. West Coast.
- Compare performance of 3 different bio-chemical models (NPZDO, NEMURO, COSINE) within a single ROMS domain.

## FY15:

- Non- DA WCOFS handed off to CO-OPS
- Using COMT for DA testing for future hand-off

## FY16:

- Continued coordination w/ NOAA WCOFS development incl. incorporation of BGC elements to WCOFS



# Cyberinfrastructure for COMT

## Objective:

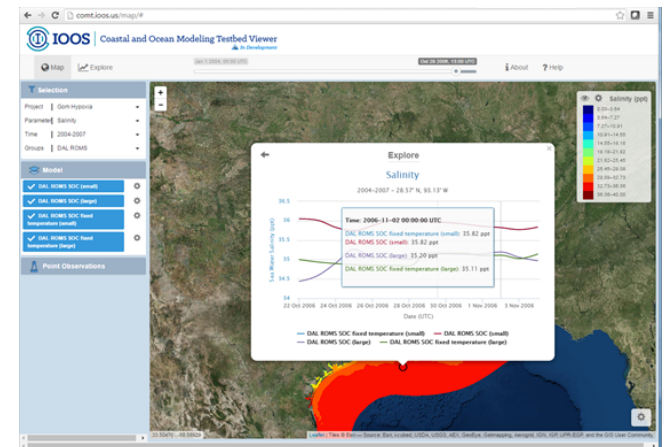
- Improve function and performance of SciWMS so it can be used to visualize all compliant model results and observational data stored on the COMT archive server
- Develop a SciWMS based web client to perform the visualization

## FY15:

- New COMT viewer launched and hosted on ioos.us
- Improved coordination w/ teams

## FY16:

- New tools to better support teams (BBL, standard depths)
- Completion of a compliance checker for COMT data



New Viewer displaying GoMx SOC Salinity



# Transition Statistics

3 projects moved to next stage:

- WCOFS project: Completed Skill Assessment by CO-OPS/CSDL for System Development Life Cycle (SDLC)
- USVI/Puerto Rico Project: Created/completed MOMs and MEOWs
- Chesapeake Bay Project: Completed and submitted code to CO-OPS for inclusion in next ROMS update and completed draft Transition Plan.

# Performance Metrics

- Relevance Metric: See above
- Quality Metric: Are TB/PG projects characterized by soundness and rigorous scientific methods? Several articles were peer reviewed and published. Operational entities are interested in using the results from COMT to meet requirements.
- Effectiveness and Efficiency: Research and operational communities held enough mtgs to ensure mutual understanding of tasks and goals, demonstrated by specific, measurable, attainable, relevant and time-bound (SMART) milestones for each team. Annual reports were submitted on time.

# Other COMT Annual Updates

- Technical Steering and Transition Management Groups reignited
- Data management plan drafted
- Continued coordination with Ecological Forecasting Roadmap and Storm Surge Roadmap

Questions?